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Clean Versions of Replacement Claims

Please cancel claims 1-17 and new claims 18-34 to conform to the following clean versions.

18. A motion control system comprising a set of control nodes each for controlling motion along a single axis of the motion control system, each control node having a clock and each independently obtaining a set of information via a network that pertains to a control value to be applied to the corresponding axis and in response each control node applying the corresponding control value to the corresponding axis when a trigger time associated with the corresponding control value matches a time in the corresponding clock such that application of the control values to the axes is coordinated by selecting the trigger times and synchronizing the times in the clocks.

19. The motion control system of claim 18, wherein each set of information specifies the trigger time and the control value for the corresponding axis.

20. The motion control system of claim 18, wherein each set of information specifies a set of equations for determining the trigger time and control value for the corresponding axis.

21. The motion control system of claim 20, wherein each control node includes a set of processing resources for determining the trigger time and the control value in response to the corresponding set of equations.

22. The motion control system of claim 21, wherein the processing resources of each control node are scaled in

response to the corresponding equations.

23. A motion control system comprising:

a set of control nodes each for controlling motion along a single axis of the motion control system, each control node having a clock and a set of tables each for holding a set of pre-computed control values and corresponding trigger times for a corresponding set of motion control functions of the corresponding axis;

selector node that transfers a set of information to each control node independently via the network that specifies one of the motion control functions to be performed in the corresponding axis such that each control node in response to the corresponding information obtains a control value for the specified motion control function from the corresponding tables and applies the control value to the corresponding axis when the corresponding trigger time matches a time in the corresponding clock such that the motion control functions of the axes are coordinated by selecting the trigger times in the tables and synchronizing the times in the clocks.

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24. The motion control system of claim 23, wherein the pre-computed control values and trigger times are generated by the selector node and transferred to the control nodes via the network.

25. The motion control system of claim 23, wherein the pre-computed control values and trigger times are generated by a set of processing resources in each control node.

26. The motion control system of claim 23, wherein each set of information identifies a subset of the

corresponding tables and a starting time such that each control node obtains the control value and the trigger time from the identified tables and applies the control value in accordance with the corresponding specified starting time.

27. A method for controlling a set of axes of a motion control system, comprising the steps of:

for each axis, independently obtaining a set of information via a network that pertains to a control value to be applied to the axis;

for each axis, applying the control value to the axis when a trigger time associated with the control value matches a time in a clock associated with the axis such that application of the control value to the axes is coordinated by selecting the trigger times and synchronizing the times in the clocks.

28. The method of claim 27, wherein one or more of the sets of information specifies the trigger time and the control value for the corresponding axis.

29. The method of claim 27, wherein one or more of the sets of information specifies a set of equations for determining the trigger time and control value for the corresponding axis.

30. The method of claim 29, further comprising the step of determining the trigger time and the control value in response to the corresponding set of equations.

31. The method of claim 30, further comprising the step of scaling a set of processing resource for the corresponding axis in response to the corresponding equations.

32. The method of claim 27, further comprising the step of generating a set of pre-computed control values and trigger times for each axis.

33. The method of claim 32, wherein each set of information specifies a subset of the pre-computed control values and trigger times and a starting time.

34. The method of claim 33, further comprising the steps of for each axis obtaining the control value and the trigger time from the specified subset and applying the control value in accordance with the corresponding specified starting time.